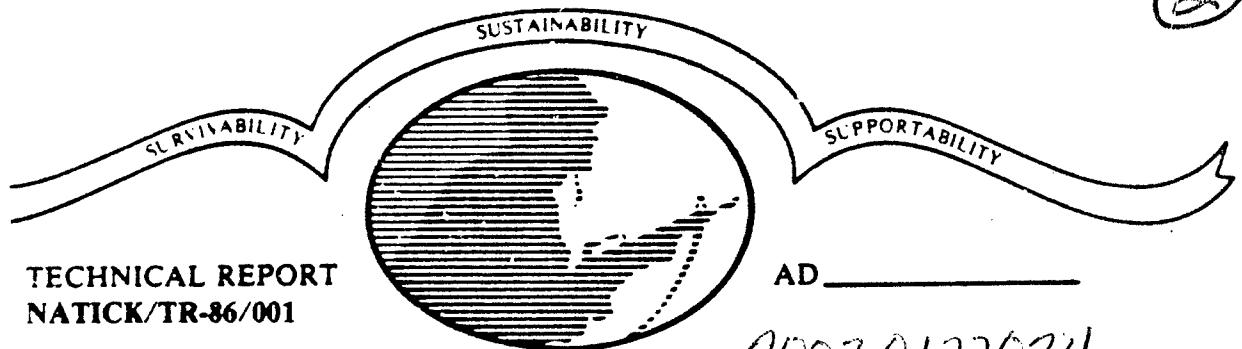


AD-A169 097



**BIBLIOGRAPHY OF TECHNICAL  
PUBLICATIONS, PAPERS, AND  
LIST OF PATENTS  
OCTOBER 1984 - SEPTEMBER 1985**

**CAROL J. BURSIK  
EDITOR**

**NOVEMBER 1985**

**FILE COPY**

**APPROVED FOR PUBLIC RELEASE;  
DISTRIBUTION UNLIMITED**

**UNITED STATES ARMY NATICK  
RESEARCH, DEVELOPMENT AND ENGINEERING CENTER  
NATICK, MASSACHUSETTS 01760-5000**

**TECHNICAL LIBRARY**

## **DISCLAIMERS**

**THE FINDINGS CONTAINED IN THIS REPORT  
ARE NOT TO BE CONSTRUED AS AN OFFICIAL  
DEPARTMENT OF THE ARMY POSITION UNLESS  
SO DESIGNATED BY OTHER AUTHORIZED  
DOCUMENTS.**

**CITATION OF TRADE NAMES IN THIS REPORT  
DOES NOT CONSTITUTE AN OFFICIAL ENDORSE-  
MENT OR APPROVAL OF THE USE OF SUCH ITEMS.**

## **DESTRUCTION NOTICE**

**FOR CLASSIFIED DOCUMENTS, FOLLOW THE PROCEDURES IN DOD  
5200.1-R, CHAPTER IX OR DOD 5220.22-M, "INDUSTRIAL SECURITY  
MANUAL", PARAGRAPH 19. FOR UNCLASSIFIED DOCUMENTS, DESTROY  
BY ANY METHOD WHICH PRECLUDES RECONSTRUCTION OF THE  
DOCUMENT.**

Unclassified  
SECURITY CLASSIFICATION OF THIS PAGE

ADA 169097

Form Approved  
OMB No 0704-0188  
Exp Date Jun 30, 1986

REPORT DOCUMENTATION PAGE			
1a REPORT SECURITY CLASSIFICATION Unclassified		1b RESTRICTIVE MARKINGS	
2a SECURITY CLASSIFICATION AUTHORITY		3 DISTRIBUTION/AVAILABILITY OF REPORT Approved for public release, distribution unlimited	
2b DECLASSIFICATION/DOWNGRADING SCHEDULE		4 PERFORMING ORGANIZATION REPORT NUMBER(S) Natick/TR-86/001	
6a NAME OF PERFORMING ORGANIZATION US Army Natick R&D Center*	6b OFFICE SYMBOL (if applicable) STRNC-ML	7a NAME OF MONITORING ORGANIZATION	
6c ADDRESS (City, State, and ZIP Code) Kansas Street Natick, MA 01760-5000		7b ADDRESS (City, State, and ZIP Code)	
8a NAME OF FUNDING/SPONSORING ORGANIZATION	8b OFFICE SYMBOL (if applicable)	9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER	
8c ADDRESS (City, State, and ZIP Code)		10 SOURCE OF FUNDING NUMBERS PROGRAM ELEMENT NO.      PROJECT NO.      TASK NO.      WORK UNIT ACCESSION NO	
11 TITLE (Include Security Classification) BIBLIOGRAPHY OF TECHNICAL PUBLICATIONS, PAPERS AND LIST OF PATENTS October 1984 - September 1985			
12 PERSONAL AUTHOR(S) Carol J. Bursik, Editor			
13a TYPE OF REPORT final	13b TIME COVERED FROM Oct 84 TO Sep 85	14 DATE OF REPORT (Year, Month, Day) November 1985	15 PAGE COUNT 26
16 SUPPLEMENTARY NOTATION * On 1 Oct 85 renamed US Army Natick Research, Development and Engineering Center			
17 COSATI CODES FIELD      GROUP      SUB-GROUP		18 SUBJECT TERMS (Continue on reverse if necessary and identify by block number) Development      Patents Research      Army Natick Research & Development Center Reports      Bibliographies Publications      Documents	
19 ABSTRACT (Continue on reverse if necessary and identify by block number) This report contains a bibliographic listing of technical publications and papers presented by personnel of the US Army Natick Research & Development Center and its contractors for the period October 1984 through September 1985 and a list of patents issued.			
20 DISTRIBUTION/AVAILABILITY OF ABSTRACT <input checked="" type="checkbox"/> UNCLASSIFIED/UNLIMITED <input type="checkbox"/> SAME AS RPT <input type="checkbox"/> DTIC USERS		21 ABSTRACT SECURITY CLASSIFICATION Unclassified	
22a NAME OF RESPONSIBLE INDIVIDUAL Carol J. Bursik		22b TELEPHONE (Include Area Code) (617) 651-4248	22c OFFICE SYMBOL STRNC-ML

DTIC  
SELECTED  
S JUN 26 1986  
E

## PREFACE

This bibliography is a list of technical publications and papers by personnel of the US Army Natick Research and Development Center and its contractors for the period October 1984 through September 1985. The arrangement is by organizational elements. Previously unreported items from past years are also listed. Patents issued to personnel in FY85 are included as a separate section.

Reprints of journal articles, in some cases, are available from the individual authors. Copies of technical reports may be obtained from (1) Defense Technical Information Center, Cameron Station, Alexandria, Virginia 22314, or (2) the National Technical Information Service, Springfield, Virginia 22161. The "AD" number should be cited when ordering copies of reports.

CAROL J. BURSIK, Editor  
Chief, Technical Library Division  
Information Management Directorate

Accession For	
NTIS GRANT	X
DTIC TIR	
Unpublished	<input type="checkbox"/>
Justification	
By _____	
Distribution/	
Availability Copies	
Army ... or	
Dist	Special
A-1	



## CONTENTS

	<b>Page</b>
PREFACE	iii
OFFICE OF THE COMMANDER	1
DIRECTORATE FOR SYSTEMS ANALYSIS AND CONCEPT DEVELOPMENT	2
TECHNICAL LIBRARY	4
AERO-MECHANICAL ENGINEERING LABORATORY	5
FOOD ENGINEERING LABORATORY	6
INDIVIDUAL PROTECTION LABORATORY	8
SCIENCE AND ADVANCED TECHNOLOGY LABORATORY	12
LIST OF PATENT ISSUANCES	18
INDEX TO AUTHORS	19

US ARMY NATICK RESEARCH AND DEVELOPMENT CENTER  
BIBLIOGRAPHY OF TECHNICAL PUBLICATIONS, PAPERS AND LIST OF PATENTS

October 1984 - September 1985

OFFICE OF THE COMMANDER

Technical Papers

1. SAUNDERS, D. L. Military foods - a continuous challenge. Research and Development Associates for Military Food and Packaging Systems, Inc. US Army Natick Research and Development Center, Natick, MA, October 11, 1984.
2. Overcoming technology gaps to meet the food production and feeding challenges of the year 2000. Research and Development Associates for Military Food and Packaging Conference, San Antonio, TX, March 21, 1985.

DIRECTORATE FOR SYSTEMS ANALYSIS AND CONCEPT DEVELOPMENT

Technical Reports

3. EAGGE, K., J. A. MANICKAS, and D. MALABARBA. Comparison of chemical warfare hazard in temperate and desert environments. Natick/TR-85/062L, August 1985 (AD B095 881).
4. HARMON, D. G., T. R. HOOKER, A. LANE, and E. J. BARNICLE. Phase II: system analysis of airdrop requirements, Army 21. The BDM Corporation, Contract No. DAAK50-C-0012. Natick/TR-85/029L, March 1985 (AD B092 776L).
5. HERZ, M. L., with J. H. LITCHFIELD, W. T. MCCOMIS, and A. H. SAMUEL. US Air Force food service in an NBC environment Volume II: recommendations for food service operations in an NBC environment. Battelle-Columbus Laboratories, Contract No. DAAH01-81-C-A277. Natick/TR-85/055L, July 1985 (AD B094 938L).
6. KIREJCZYK, H. J. Field feeding system to support USMC forces in the 1990s. Natick/TR-85/011, July 1984 (AD A148 953).
7. KIREJCZYK, H. J. The cold weather 83 evaluation of the mobile food service unit and Tray Packs. Natick/TR-85/009, August 1984 (AD A148 850).
8. KIREJCZYK, H. J. Technology demonstrations of proposed USMC field feeding system for the 1990s. Natick/TR-85/054, June 1985 (AD A157 967).
9. KIREJCZYK, H. J., W. CHEVALIER, B. EDELMAN, and R. V. DECAREAU. A systems analysis of Army field bread and bakery requirements. Natick/TR-85/012, February 1985 (AD A152 084).
10. LAFERRIERE, R. R., J. OVELMAN, L. SYMINGTON, J. PRIFTI, and P. D. LEITCH. A systems analysis of food service at Army remote and isolated sites. Natick/TR-85/063, June 1985.
11. MALABARBA, D., R. D. DAVIS, and M. MAGGARD. An analysis of the US Army heavy airdrop rigging capability Phase I - assessment of heavy airdrop rigging operations. Natick/TR-84/027L, October 1983 (AD B083 929L).
12. MANICKAS, J. A. Helmet concept alternatives for combat vehicle crewmen. Natick/TR-85/005L, November 1982 (AD B088 068L).
13. MCNEELY, J. J., M. KLUSE, and F. A. FORSTER. Definition of alternatives for a BW/CW defense database. Battelle-Columbus Laboratories, Contract No. DAAH01-83-D-A008. Natick/TR-85/051, July 1985 (AD A158 016).
14. O'BRIEN, R. T., R. BUSTEAD, A. V. CARDELLO, and G. J. SILVERMAN. Evaluation of an advanced preparation hospital food service system. Natick/TR-85/023, October 1984 (AD A151 747).

DIRECTORATE FOR SYSTEMS ANALYSIS AND CONCEPT DEVELOPMENT

Technical Reports (cont'd)

15. CSTRONSKY, M., and L. SYMINGTON. Systems analysis of Marine Corps field feeding alternatives in an NBC environment. Natick/TR-85/059L, June 1985 (AD PC94 82 L).
16. SHORT, P., L. E. SYMINGTON, and S. GRAVINA. Food service support for ground-launched cruise missile dispersed flights. Natick/TR-85/040, December 1984 (AD A156 136).
17. WALKER, J. M. A systems analysis of alternative concepts for aircREW cold weather clothing. Natick/TR-84/045, March 1983 (AD A148 805).
18. WELCH, A. J., M. L. WOLBARSHT, and W. HAM. Simulation of the effectiveness of filters for preventing retinal damage due to laser irradiation. Battelle-Columbus Laboratories, Contract No. DAAG29-81-D-0100. Natick/TR-85/060L, July 1985 (AD B097 914).

Journal Article

19. JOBE, J. B., D. E. ROBERTS, and J. B. SAMPSON. Conditioning therapy in Raynaud's phenomenon. Adv. Microcirculation, 12: 127-137 (1985).

Technical Papers

20. GRAVES, R. Alarm simulation in CHEMCAS. AMAF Industries. Annual CRDC Chemical Modeling Conference, US Army Chemical Research and Development Center, Aberdeen Proving Ground, MD, July 17, 1985.
21. MALABARBA, D., C. R. CRAWFORD, and B. GOULD. Battlefield hazard level study methodology. 53rd Military Operations Research Society Symposium, US Air Force Academy, Colorado Springs, CO, June 25, 1985.
22. MALABARBA, D., and R. SPRING. Sources of bias in chemical warfare simulation. 23rd Annual US Army Operations Research Symposium, Fort Lee, VA, October 2-4, 1984.

TECHNICAL LIBRARY

Technical Report

23. BURSIK, C. J., Editor. Bibliography of technical publications, papers, and list of patents October 1983 - September 1984. US Army Natick Research and Development Center. NATICK/TR-85/001, November 1984 (AD A155 339).

AERO-MECHANICAL ENGINEERING LABORATORY

Technical Reports

24. CARR, A. G., and A. W. CLARIDGE. Draft technical manual for transportable helicopter enclosure. Natick/TR-84/051, December 1984 (AD A164 557).
25. DAVEY, C. T., J. F. HEFFRON, and J. L. CHRISTOPHER. The effects of static electrification on airdrop systems. Franklin Research Center, Division of Arvin Calspan. Contract No. DAAK 60-82-C-0057. Natick/TR-85/015L, September 1983 (AD B090 183L).
26. GALEZEWSKI, A. J. Tentage fabric laminate resistant to chemical warfare agents. Natick/TR-85/058L, January 1985 (AD B095 949L).
27. LEE, C. K. Heat transfer of fibrous insulation battings. Natick/TR-84/055, October 1984 (AD A161 032).

Technical Paper

28. LEE, C. K. Insulation materials for tentage. 1984 Cold Weather Conference, US Army Natick Research and Development Center, Natick, MA, November 6-7, 1984.

## FOOD ENGINEERING LABORATORY

### Technical Reports

29. CUMMINGS, R. D. Tray Pack improved durability packaging rough handling test results. Cummings Solar Corporation. Contract No. DAAK 60-82-C-0052. Natick/TR-85/026, June 1983 (AD A160 816).
30. LOVERIDGE, V. A., and J. E. ROSADO. Operational guides for frozen products prepared by the F. E. Warren Foil Pack Facility. Natick/TR-85/053, July 1985 (AD A161 276).

### Journal Articles

31. FIELD, R. A., J. C. WILLIAMS, V. S. PRASAD, H. R. CROSS, J. L. SECRIST, and M. S. BREWER. An objective measurement for evaluation of bind in restructured lamb roasts. J. Texture Stud., 15 (1984).
32. LIBARDONI, M. A., and H. DOSTOURIAN. How the military is assured of the latest in foodservice equipment and technology. Act. Rep. R. and D. Assoc., 37(1): 57-64 (1985).
33. SECRIST, J. L., B. BERRY, and J. J. SMITH. Effects of fat level on sensory, cooking and INSTRON properties of restructured beef steaks. J. Animal Sci., 50(2): 434-439 (1985).
34. SECRIST, J. L., H. R. CROSS, R. A. FIELD, J. C. WILLIAMS, and M. S. BREWER. Influence of sex, NaCl, MSL, nitrite, and storage on sensory properties of restructured lamb roasts. J. Food Qual., 7 (2): 121-129 (1984).

### Technical Papers

35. KELLEY, N. Thermostabilized tray meals. Research and Development Associates for Military Food and Packaging Systems, Inc., Chicago, IL, March 20-22, 1985.
36. KLICKA, M. V. Research and development in foods and packaging for US armed forces and its spinoff for space flight use. Health and Nutrition in Africa Conference, Nairobi, Kenya, Africa, March 12, 1985.
37. LIBARDONI, M., and H. DOSTOURIAN. How the military is assured of the latest in foodservice equipment and technology. Research and Development Associates for Military Food and Packaging Systems, Inc., US Army Natick Research and Development Center, Natick, MA, October 10-12, 1984.
38. MANSUR, R. The Meal, Ready-to-Eat (MRE) of the future. Research and Development Associates for Military Food and Packaging Systems, Inc., Chicago, IL, March 20-22, 1985.

FOOD ENGINEERING LABORATORY

Technical Papers (cont'd)

39. SALANT, A. Update on DoD food RDT&E program. Commonwealth Defense Science Organization, Food Study Group Symposium, Brighton, England, April 1985.
40. SHAW, C. P. Utilization of enzymes in meat powders for liquid feeding. International Food Technologists Meeting, Atlanta, GA, June 9, 1985.
41. SZCZEBLOWSKI, J., J. M. SMITH, C. LIZAK, J. CLAYTON, and J. ROSENAU. Putting "PEP" into Tray Packs - a case study. Research and Development Associates for Military Food and Packaging Systems, Inc., US Army Natick Research and Development Center, Natick, MA, October 10-12, 1984.
42. TAUB, I. Window of acceptance in thermoprocessing: concept and practice. ARO Workshop on Destruction of Bacterial Spores, Brussels, Belgium, May 1, 1985.

Other Publications

43. DECAREAU, R. V. Cooking using infrared and microwave radiation. In Advances in Catering Technology 3. G. Glew (ed). New York: Elsevier Applied Science Publishers, 1985.
44. \_\_\_\_\_ . Microwaves in the Food Processing Industry. New York: Academic Press, Inc., 1985, 256 pp.

INDIVIDUAL PROTECTION LABORATORY

Technical Reports

45. ABDESAKEN, F., H. F. FILLIUS, M. A. KOALS and G. N. ARONS. Development of foam sorbent structures for CW protective clothing. Rohm and Haas Company, Spring House, PA, Contract No. DAAK60-81-C-0119. Natick/TR-85/030L, July 1984.
46. BRETCHES, D. D., G. O'CONNOR, and R. N. MACNAIR. Preparation of activated carbon-filled microporous hollow multifilament - III. Albany International Research Company, Dedham, MA, Contract No. DAAK60-81-C-0114. Natick/TR-85/036L, September 1985 (AD B095 891L).
47. COSIMINI, H., J. COHEN, B. DECRISTOFANO, R. GOFF, V. IACONO, M. KUPCINSKAS, and T. TASSINARI. Determination of the feasibility of two commercial portable microclimate cooling systems for military use. Natick/TR-85/033L, March 1985 (AD B091 900).
48. DONOVAN, J. G., B. KIRKWOOD, and F. FIGUCIA. Development of lower cost ballistic protection. Albany International Research Co., Dedham, MA, Contract No. DAAK60-81-C-0084. Natick/TR-85/019L, October 1985 (AD B098 848).
49. DONOVAN, J. G., and F. B. PETERS. Investigation of the feasibility of flocking with activated carbon to produce protective garment materials. Albany International Research Co., Dedham, MA, Contract No. DAAK60-81-C-0074. Natick/TR-85/020L, January 1983 (AD B099 294).
50. DRINKWINE, A. D., and G. N. ARONS. Investigation of concept of fabric/immobilized enzyme systems for chemical protection. Midwest Research Institute, Kansas City, MO. Natick/TR-85/048L, October 1985 (AD B098 758).
51. HERPICK, J. W., and F. B. PETERS. Investigation and preparation of highly sorptive carbon laminates for potential use in chemical protective clothing. Fiber Materials, Inc., Biddeford, ME, Contract No. DAAK60-81-C-0019. Natick/TR-85/021L, August 1982 (AD B098 264).
52. . Development of improved chemical protective fabrics containing activated carbon powder. Fiber Materials, Inc., Biddeford, ME, Contract No. DAAK60-82-C-0116. Natick/TR-85/022L, September 1984 (AD B099 037).
53. HOUGH, P. S., M. O. PARKER, and N. R. S. HOLLIES. Material and design classifications and their recommended usage for additional testing in functional protective clothing systems. Gillette Research Institute, Rockville, MD, Contract No. DAAK60-80-C-0015. Natick/TR-85/043L, June 1985 (AD B094 785L).

INDIVIDUAL PROTECTION LABORATORY

Technical Reports (cont'd)

54. HOWLAND, G. R., D. D. BRETCHES, and R. N. MACNAIR. Preparation of sorptive flame retardant fiber and fabric containing activated carbon. Contract No. DAAK60-78-C-0086. Natick/TR-85/031L, August 1985 (AD B094 878L).
55. KIM, D. W., D. E. STUETZ, and H. H. GEORGE. Development of improved permeable and impermeable material for chemical protective clothing. Celanese Research Company, Summit, NJ, Contract No. DAAK60-80-C-0093. Natick/TR-85/025L, June 1985 (AD B094 777).
56. KIM, D. W., J. W. SOEHNGEN, and G. N. ARONS. Improved microporous hollow polypropylene fibers filled with active carbon powder. Celanese Research Company, Summit, NJ, Contract No. DAAK60-81-C-0118. Natick/TR-85/018L, July 1983 (AD B099 354).
57. MCKINNEY, M. Chemical protective suit stock surveillance study - phase I. Natick/TR-85/006L, May 1984 (AD B088 679).
58. MCMAHON, W. A., JR., W. W. HARLOWE, JR., and D. J. MANGOLD. Feasibility study of utilizing phase change coolant for protective garments. Southwest Research Institute, San Antonio, TX, Contract No. DAAK60-81-C-0098. Natick/TR-85/013L, December 1984 (AD B094 870L).
59. PROSSER, R. A. The penetration of nylon ballistic panels by fragment simulating projectiles, Part I: A linear approximation to the relationship between the square of the V<sub>50</sub> or VC striking velocity and the number of layers of cloth in the ballistic panel. Natick/TR-85/027L, August 1985 (AD B094 495).
60. \_\_\_\_\_ The penetration of nylon ballistic panels by fragment simulating projectiles, Part II: Mechanism of penetration. Natick/TR-85/028L, August 1985 (AD B094 161).
61. RODMAN, C. A., E. C. HOMONOFF, and G. N. ARONS. Development of prototype laminates of dry-laid webs of active carbon fibers. Fram Corporation, East Providence, RI, Contract No. DAAK60-82-C0060. Natick/TR-85/032L, June 1984.
62. RUTLEDGE, B. L., W. F. BECKWITH, and G. N. ARONS. Development of improved wet laid webs of activated carbon fibers. Clemson University, Clemson, SC, Contract No. DAAK60-81-C-0126. Natick/TR-85/024L, September 1984 (AD B099 156).
63. SHERWOOD, C. H., and G. N. ARONS. Investigation of in-situ fiber fabrics impregnated with active carbon powder. Hughes Aircraft Company, Culver City, CA, Contract No. DAAK60-81-C-0006. Natick/TR-85/017L, February 1982.

INDIVIDUAL PROTECTION LABORATORY

Technical Reports (cont'd)

64. SOEHNGEN, J. W., W. FABISIAK, and G. N. ARONS. Microporous hollow polypropylene fibers filled with active carbon powder. Celanese Research Company, Summit, NJ, Contract No. DAAK60-79-C-0106. Natick/TR-85/016L, March 1981.
65. TASSINARI, T. H., and V. D. IACONO. Microclimate controlled tank crewmen clothing for extended mission time in chemical-biological environments. Natick/TR-85/002L, December 1984 (AD B089 337L).

Technical papers

66. ARONS, G. N., E. C. HOMONOFF, and C. A. RODMAN. Chemical barrier nonwoven fabrics containing active carbon fibers. 17th Biennial Conference on Carbon, American Carbon Society, University of Kentucky, Lexington, KY, June 16-21, 1985.
67. COMMERFORD, T. R. Camouflage for the individual soldier. Integrated Individual Fighting System Program, Joint Working Group, Ft. Monroe, VA, February 12, 1985.
68. GORDON, C. C. Anthropometry, allometry, and sexual dimorphism in the design of protective clothing and equipment. Annual Meeting of the American Association of Physical Anthropologists, Knoxville, TN, April 1985.
69. HEPFINGER, L. B. Instrumental approach to color acceptability judgements. 1984 International Conference and Exhibition, American Association of Textile Chemists and Colorists, Chicago, IL, October 3-5, 1984.
70. LAIBLE, R. Barrier materials for cold weather use. 1984 Cold Weather Conference, Natick, MA, November 6, 1984.
71. REINHART, K. A. Fabric technology - clothing and individual equipment. The Advanced Infantry Requirements Briefing to Industry, Ft. Benning GA, June 18-20, 1985.
72. REINHART, K. A., and T. R. COMMERFORD. State-of-the-art camouflage capabilities. The Advanced Infantry Requirements Briefing to Industry, Ft. Benning, GA, June 18-20, 1985.
73. SMITH, C. A., and L. G. COFFIN. The effect of outdoor weather exposure in Panama on selected military fabrics. Outlook '85 Conference: Industrial Fabrics Association International, Charlotte, NC, May 1985.

INDIVIDUAL PROTECTION LABORATORY

Technical Papers (cont'd)

74. WILUSZ, E. Permeable testing of barrier materials. Workshop on Methodology for Testing of Materials with Hazardous Liquids, Chemical Research and Development Center, Aberdeen Proving Ground, MD, July 9-11, 1985.

Other Publication

75. BENSEL, C. K. Encumbrances imposed on the human body by protective clothing systems. In Effects of the Environment and Protective Clothing on the U.S. Soldier, Proceedings of the Human Factors Society, Volume 1, 28th Annual Meeting, San Antonio, TX, October 22-26, 1984, 513.

SCIENCE AND ADVANCED TECHNOLOGY LABORATORY

Technical Reports

76. GREENBERGER, M., B. J. WILEY and A. M. KAPLAN. Fungal resistance of nonmetallic honeycomb core materials for shelter panels. Natick/TR-85/056, June 1985 (AD A159 287).
77. GREENBERGER, M., B. J. WILEY, J. STEVENS, and A. M. KAPLAN. Microbial evaluation of seven combat boot walk-off candidates. Natick/TR-85/039, October 1984 (AD A154 590).
78. GREENE, B., D. L. KAPLAN, and A. M. KAPLAN. Degradation of pink water compounds in soil - TNT, RDX, HMX. Natick/TR-85/046, January 1985.
79. HIRSCH, E., H. L. MEISELMAN, R. D. POPPER, G. SMITS, B. JEZIOR, I. LICHTON, N. WENKAM, J. BURT, M. FOX, S. MCNUTT, M. N. THIELE, and O. DIRIGE. The effects of prolonged feeding Meal, Ready-to-Eat (MRE) operational rations. Natick/TR-85/035, October 1984 (AD A154 763).
80. KAPLAN, D. L., and A. M. KAPLAN. Bioconversion of nitramine propellant wastewaters - triamireoguanidine nitrate. Natick/TR-85/045, January 1985 (AD A157 860).
81. \_\_\_\_\_ Degradation of nitroguanidine. Natick/TR-85/047, January 1985 (AD A157 859).
82. KAPLAN, D. L., E. ROSS, D. EMERSON, R. LEDOUX, J. MAYER, and A. M. KAPLAN. Effects of environmental factors on the transformation of 2,4,6-trinitrotoluene in soils. Natick/TR-85/052, January 1985 (AD A157 812).
83. MCCORMICK, N. G., T. D. PELTONEN, and A. M. KAPLAN. Biotransformation of waste water constituents from ball powder production. Natick/TR-85/050, June 1985 (AD A164 148).
84. O'BRIEN, R. T., R. BUSTEAD, A. V. CARDELLO, and G. J. SILVERMAN. Evaluation of an advanced preparation hospital food service system. Natick/TR-85/023, October 1984 (AD A151 747).
85. ROACH, J. F., and G. J. CALDARELLA. CO<sub>2</sub> laser irradiation of fabrics for Army uniforms and personnel items. Natick/TR-85/049L, August 1984 (AD B093 526).
86. WILEY, B. J., Editor. Proceedings of the Thirty-Third Conference on Microbiological Deterioration of Military Materiel, November 1984. Natick/TR-85/057L, June 1985 (AD B094 699).

SCIENCE AND ADVANCED TECHNOLOGY LABORATORY

Journal Articles

87. CARDELLO, A. V., O. MALLER, H. BLOOM-MASOR, C. DUBOSE, and B. EDELMAN. The role of consumer expectancies in the acceptance of novel foods. *J. Food Sci.*, 50(6): 1707-1714, 1718 (1985).
88. CARDELLO, A. V., O. MALLER, and R. KLUTER. Multi-user assessment of a hospital cook-freeze foodservice system. *J. Food Service Sys.*, 3(3): 153-169 (1984).
89. EDELMAN, B., D. ENGELL, P. BRONSTEIN, and E. HIRSCH. Environmental effects on the intake of overweight and normal weight men. *Appetite* (in press).
90. GREENBERGER, M., A. M. KAPLAN, and B. J. WILEY. Observations on mildew susceptibility of painted surfaces in tropical chamber exposure. *J. Coatings Technol.*, 57(731): 59-65 (1985).
91. HIRSCH, E. Critical ration attributes for adequate nutrient consumption. *Act. Rep. R&D Assoc.* (in press).
92. \_\_\_\_\_ Food availability as a determinant of sucrose-induced obesity and dietary selection. *Physiol. Behav.* (in press).
93. KANAREK, R., and E. HIRSCH. Interaction of diet and obesity with strepto-otocin-induced diabetes. *Nutr. Behav.* (in press).
94. KAPLAN, D. L., and A. M. KAPLAN. Biodegradation of N-nitrosodi-methylamine in aqueous and soil systems. *Appl. Env. Microbiol.*, 50(10): 1077-1086 (1985).
95. KRAMER, R. E. Antioxidants in clove. *J. Amer. Oil Chem. Soc.*, 62(1): 111-113 (1985).
96. LACHICA, R. V. Egg yolk-free Baird-Parker medium for the accelerated enumeration of foodborne *Staphylococcus aureus*. *Appl. Environ. Microbiol.*, 48(4): 870-87. (1984).
97. LACHICA, R. V., D. L. ZINK, and W. R. FERRIS. Association of fibril structure formation with cell surface properties of *Yersinia enterocolitica*. *Infect. Immun.*, 46(1): 272-275 (1984).
98. MERRITT, C., JR., M. VAJDI, and P. ANGELINI. A quantitative comparison of the yields of radiolysis products in various meats and their relationship to precursors. *J. Amer. Oil Chem. Soc.*, 62(4): 708-713 (1985).
99. MISSLER, S. R., B. A. WASILCHUK, and C. MERRITT, JR. Separation and identification of cholesterol oxidation products in dried egg preparations. *J. Food Sci.*, 50(3): 595-598, 646 (1985).

SCIENCE AND ADVANCED TECHNOLOGY LABORATORY

Journal Articles (cont'd)

100. NARAYAN, K. A. The interactive effect of glycerol and starch or sucrose on rat tissue lipids. *Nutr. Rep. Int.*, 33(1): 33-41 (1986).
101. VAJDI, M., and C. MERRITT, JR. Identification of adduct radiolysis products from pork fat. *J. Amer. Oil Chem. Soc.*, 62(8): 1252-1260 (1985).
102. WARNER, K., E. N. FRANKEL, J. M. SNYDER, and W. L. PORTER. Storage stability of soybean oil-based salad dressings. Effect of antioxidants and hydrogenation. *J. Food Sci.* (in press).

Technical Papers

103. COHEN, S. Microscopic analysis of materials. Annual Scanning Electron Microscopy Meeting, Las Vegas, NV, April 1985.
104. . The use of laser diffraction as a substitute for microscopic measurement. Kraft Corp., Glenview, IL, October 1985.
105. DUNNE, C. P., K. MULCAHY, and E. GOFFI. Objective measurements of organic acids and other quality indicators in frozen foods. 45th Annual Meeting, Institute of Food Technologists, Atlanta, GA, June 12, 1985.
106. FFEHERRY, F., D. MUNSEY, and D. ROWLEY. Thermal inactivation and injury of spores of Bacillus stearothermophilus. 85th Annual Meeting, American Society for Microbiology, Las Vegas, NV, March 3-8, 1985.
107. GALLO, B. J., D. A. GOWENLOCK, J. E. WALKER, and A. M. KAPLAN. The production of microbial cholinesterase by a new isolate of Pseudomonas. 1984 Scientific Conference on Chemical Defense Research, Chemical Research and Development Center, Aberdeen Proving Ground, MD, November 13-16, 1984.
108. GALLO, B. J., D. A. GOWENLOCK, J. E. WALKER, J. K. MARQUIS, and R. D. MACCALLUM. The production of prokaryotic cholinesterase. Triservice Workshop on Enzymatic Decontamination, US Army Medical Research and Development Command, Fort Detrick, MD, March 26-28, 1985.
109. KAPLAN, A. M. Introductory remarks on the antecedence and history of the conference on applied and environmental microbiology. Gordon Research Conference, Colby-Sawyer College, New London, NH, August 12-16, 1985.
110. . Microbial transformations of polymeric materials: applied and theoretical considerations. The Biodeterioration Society, Cranfield Institute of Technology, Cranfield, England, September 12, 1985.

SCIENCE AND ADVANCED TECHNOLOGY LABORATORY

Technical Papers (cont'd)

111. LACHICA, R. V. Bacterial attachment to surfaces: its significance in food poisoning and spoilage. Workshop on the Microbial Safety of Foods, U.S. Department of Agriculture, Philadelphia, PA, April 17, 1985.
112. LACHICA, R. V., and D. W. THAYER. Rapid methods for demonstrating plasmid-mediated properties of Yersinia enterocolitica. 98th Annual Meeting, Association of the Official Analytical Chemists, Washington, D.C., October 29 - November 1, 1985.
113. LACHICA, R. V., D. W. THAYER, and S. BHADURI. Expression of plasmid-mediated outer membrane proteins and surface properties of Yersinia enterocolitica. 85th Annual Meeting, American Society for Microbiology, Las Vegas, NV, March 3-7, 1985.
114. LACHICA, R. V., D. W. THAYER, and M. MEDINA. Calcium-deficient media and instability of the virulence plasmid of Yersinia enterocolitica. 85th Annual Meeting, American Society for Microbiology, Las Vegas, NV, March 3-7, 1985.
115. MEISELMAN, H. L., and E. HIRSCH. A field test of behavioral/nutritional effects of prolonged combat rations. 26th Annual Conference of the Military Testing Association, Munich, Federal Republic of Germany, November 1984.
116. PORTER, W. L., E. D. BLACK, C. P. SHAW, J. K. JARBOE, and C. P. DUNNE. Use of polyamide fluorescence as accelerated storage life test for oil in the food emulsions: mayonnaise and salad dressing. 189th Annual Meeting, American Chemical Society, Miami Beach, FL, April 29 - May 3, 1985.
117. SYMINGTON, L. E. Indicators of stress in military life support systems. 9th Congress of the International Ergonomics Association, Bournemouth, England, September 1985.
118. THAYER, D. W., R. V. LACHICA, C. N. HUHTANEN, and E. WIERBICKI. Irradiation as a possible alternative method for ensuring microbiological safety of meat. 45th Annual Meeting, Institute of Food Technologists, Atlanta, GA, June 9-12, 1985.
119. WALKER, J. E., M. CAPOZZI, B. J. GALLO, F. M. ROBBINS, and A. M. KAPLAN. Isolation and partial characterization of a bacterial cholinesterase. 1984 Scientific Conference on Chemical Defense Research, Chemical Research and Development Center, Aberdeen Proving Ground, MD, November 13-16, 1984.
120. WALKER, J. E., and F. M. ROBBINS. Immobilization of organophosphonate binding enzymes. Triservice Workshop on Enzymatic Decontamination, U.S. Army Medical Research and Development Command, Fort Detrick, MD, March 26-28, 1985.

SCIENCE AND ADVANCED TECHNOLOGY LABORATORY

Other Publications

121. CARDELLO, A. V. Review: Food research and data analysis. H. Martins and H. Russwurm (eds). *J. Food Biochem.*, 8(4): 342-344 (1984).
122. CARDELLO, A. V., and O. MALLER. Psychophysical measurement and the assessment of food quality. In Objective Methods in Food Quality Assessment. J. Kapsalis (ed). Boca Ration, FL: CRC Press (in press).
123.       . Recent approaches and applications of sensory texture analyses to food and ration development. In Food Texture. H. R. Moskowitz (ed). New York: Marcel-Dekker (in press).
124. GALLO, B. J., D. A. GOWENLOCK, J. E. WALKER, and A. M. KAPLAN. The production of microbial cholinesterase by a new isolate of Pseudomonas. In Proceedings of the 1985 Scientific Conference on Chemical Defense Research. CRDC/SP/85006, June 1985, 653-658 (AD B094 742).
125. KAPSALIS, J. G., D. H. BALL, D. M. ALABRAN, and A. V. CARDELLO. Polyglycerols and polyglycerol esters as potential water activity reducing agents: chemistry and sensory analysis. In Properties of Water in Foods in Relation to Quality and Stability. D. Simatos and J. L. Multon (eds). Dordrecht/Boston/Lancaster: Martinus Nijhoff, 1985, 481-496.
126. KUZNICKI, J., and A. V. CARDELLO. Psychophysics of single taste papillae. In Proceedings of the Sloane-Kettering Taste and Smell Conference, Washington, DC, June 1983. H. Meiselman and J. Rivlin (eds). Lexington, MA: Callamorro Press (in press).
127. MEISELMAN, H. L., and E. HIRSCH. A field test of behavioral/nutritional effects of prolonged combat rations. In Proceedings of the 26th Annual Conference of the Military Testing Association, Volume I, Munchen, Federal Republic of Germany, 1984, 517-522.
128. NARAYAN, K. A. Determination of tissue lipids. In Methods for Nutritional Assessment of Fats. J. Beare-Rogers (ed). Champaign, IL: American Oil Chemists Society, 1985 (in press).
129. PORTER, W. L. Quick test useful in detecting rancid oils, Army researcher notes. *Food Chemical News*, 27(10): 33-34, May 13, 1985.
130.       . Test may show when oil is bad. *The Times*, Hammond, IN, May 15, 1985.
131. SCHWAB, A. H., H. V. LEININGER, and E. M. POWERS. Media reagents and strains. In Compendium of Methods for the Microbiological Examination of Foods. M. Speck (ed). Washington, DC: American Public Health Association, 1984, Chapter 58.

SCIENCE AND ADVANCED TECHNOLOGY LABORATORY

Other Publications (cont'd)

132. SILVERMAN, G. J. Enterotoxin secretion during extended growth of Staphylococcus aureus on agar surfaces. In Bacterial Protein Toxins. J. E. Alouf (ed). London: Academic Press, 1984.
133. TATINI, S. R., D. G. HOOVER, and R. V. LACHICA. Methods for the isolation and enumeration of Staphylococcus aureus. In Compendium of Methods for the Microbiological Examination of Foods. M. L. Speck (ed). Washington, DC: American Public Health Association, 1984, 411-427.

**LIST OF PATENT ISSUANCES**

<b>Date</b>	<b>Name</b>	<b>Lab/Ofc</b>	<b>Title of Patent</b>
Feb 19 85	Calvin Lee Deirdre E. Rapacz	AMEL IPL	Composite Thermal Insulation Liner
May 14 85	Bruce Buckland	DEPM	Adjustable Earcup Retention Harness

This document reports research undertaken at the US Army Natick Research and Development Center and has been assigned No. Natick/TR-86/001 in the series of reports approved for publication.

**INDEX TO AUTHORS**  
(Entry Numbers)

Abdesaken, F.	45	Edelman, B.	9, 87, 89
Alabran, D. M.	125	Engell, D.	89
Angelini, P.	98	Emerson, D.	82
Arons, G. N.	45, 50, 56, 61, 62, 63, 64, 66	Fabisiak, W.	64
Bagge, K.	3	Feeherry, F.	106
Ball, D. H.	125	Ferris, W. R.	97
Barnicle, E. J.	4	Field, R. A.	31, 34
Beckwith, W. F.	62	Figucia, F.	48
Bensel, C. K.	75	Fillius, H. F.	45
Berry, B.	33	Forster, F. A.	13
Bhaduri, S.	113	Fox, M.	79
Black, E. D.	116	Frankel, E. N.	102
Bloom-Masor, H.	87	Galezewski, A. J.	26
Bretches, D. D.	46, 54	Gallo, B. J.	107, 108, 119, 124
Brewer, M. S.	31, 34	George, H. H.	55
Bronstein, P.	89	Goff, R.	47
Bursik, C. J.	23	Goffi, E.	105
Burt, J.	79	Gordon, C. C.	68
Bustead, R.	14, 84	Gould, B.	21
Caldarella, G. J.	85	Gowenlock, D. A.	107, 108, 124
Capozzi, M.	119	Graves, R.	20
Cardello, A. V.	14, 84, 87, 88, 121, 122, 123, 125, 126	Gravina, S.	16
Carr, A. G.	24	Greenberger, M.	76, 77, 90
Chevalier, W.	9	Greene, B.	78
Christopher, J. L.	25	Ham, W.	18
Claridge, A. W.	24	Harlowe, W. W., Jr.	58
Clayton, J.	41	Harmon, D. G.	4
Coffin, L. G.	73	Heffron, J. F.	25
Cohen, J.	47	Hepfinger, L. B.	69
Cohen, S.	103, 104	Herrick, J. W.	51, 52
Commerford, T. R.	67, 72	Herz, M. L.	5
Cosimini, H.	47	Hirsch, E.	79, 89, 91, 93, 115, 127
Crawford, C. R.	21	Hollies, R. S.	53
Cross, H. R.	31, 34	Homonoff, E. C.	61, 66
Cummings, R. D.	29	Hooker, T. R.	4
Davey, C. T.	25	Hoover, D. G.	133
Davis, R. D.	11	Hough, P. S.	53
Decareau, R. V.	9, 43, 44	Howland, G. R.	54
DeCristofano, B.	47	Huhtanen, C. N.	118
Dirige, O.	79	Iacono, V.	47, 65
Donovan, J. G.	48, 49	Jarboe, J. K.	116
Dostourian, H.	32, 37	Jeziors, B.	79
Drinkwine, A. D.	50	Jobe, J. B.	19
Dubose, C.	87		
Dunne, C. P.	105, 116		

INDEX TO AUTHORS (cond't)

Kanarek, R.	93	Medina, M.	114
Kaplan, A. M.	76, 77, 78, 80, 81, 82, 83, 90, 94, 107, 109, 110, 119, 124	Meiselman, H. L.	79, 115, 127
Kaplan, D. L.	78, 80, 81, 82, 94	Merritt, C., Jr.	98, 99, 101
Kapsalis, J. G.	125	Missler, S. R.	99
Kelley, N.	35	Mulcahy, K.	105
Kim, D. W.	55, 56	Munsey, D.	106
Kirejczyk, H. J.	6, 7, 8, 9	Narayan, K. A.	100, 128
Kirkwood, B.	48	O'Brien, R. T.	14, 84
Klicka, M. V.	36	O'Connor, G.	46
Kluse, M.	13	Ostrowsky, M.	15
Kluter, R.	88	Ovelman, J.	10
Koals, M. A.	45	Parker, M. O.	53
Kramer, R. E.	95	Peltonen, T. D.	83
Kupcinskas, M.	47	Peters, F. E.	49, 51, 52
Kuznicki, J.	126	Popper, R. D.	79
Lachica, R. V.	96, 97, 111, 112, 113, 114 118, 133	Porter, W. L.	102, 116, 129, 130
Laferriere, R. R.	10	Powers, E. M.	131
Laible, R.	70	Prasad, V. S.	31
Lane, A.	4	Pritti, J.	10
Ledoux, R.	82	Prosser, R. A.	59, 60
Lee, C. K.	27, 28	Reinhart, K. A.	71, 72
Leininger, H. V.	131	Roach, J. F.	85
Leitch, P. D.	10	Robbins, F. M.	119, 120
Libardoni, M.	32, 37	Roberts, D. E.	19
Lichton, I.	79	Rodman, C. A.	61, 66
Litchfield, J. H.	5	Rasado, J. E.	30
Lizak, C.	41	Rosenau, J.	41
Loveridge, V. A.	30	Ross, E.	82
MacCallum, R. D.	108	Rowley, D.	106
Macnair, R. N.	46, 54	Rutledge, B. L.	62
Maggard, M.	11	Salant, A.	39
Malabarba, D.	3, 11, 21, 22	Sampson, J. B.	19
Maller, O.	87, 88, 122, 123	Samuel, A. H.	5
Mangold, D. J.	58	Saunders, D. L.	1, 2
Manickas, J. A.	3, 12	Schwab, A. H.	131
Mansur, R.	38	Sechrist, J. L.	31, 33, 34
Marquis, J. K.	108	Shaw, C. P.	40, 116
Mayer, J.	82	Sherwood, C. H.	63
McComis, W. T.	5	Short, P.	16
McCormick, N. G.	83	Silverman, G. J.	14, 84, 132
McKinney, M.	57	Smith, C. A.	73
McMahon, W. A., Jr.	58	Smith, J. J.	33
McNeely, J. J.	13	Smith, J. M.	41
McNutt, S.	79		

INDEX TO AUTHORS (cond't)

Smits, G.	79	Vajdi, M.	98, 101
Snyder, J. M.	102	Walker, J. E.	107, 108, 119, 120, 124
Soehngen, J. W.	56, 64	Walker, J. M.	17
Spring, R.	22	Warner, K.	102
Stevens, J.	77	Wasilchuk, B. A.	99
Stuetz, D. E.	55	Welch, A. J.	18
Symington, L.	10, 15, 16, 117	Wenkam, N.	79
Szczeblowski, J.	41	Wierbicki, E.	118
Tassinari, T.	47, 65	Wiley, B. J.	76, 77, 86, 90
Tatini, S. R.	133	Williams, J. C.	31, 34
Taub, I.	42	Wilusz, E.	74
Thayer, D. W.	112, 113, 114, 118	Wolbarsht, M. L.	18
Thiele, M. N.	79	Zink, D. L.	97